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APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
10/536,854	05/27/2005	Jae Min Oh	8255.100USWO	4659

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HAMRE, SCHUMANN, MUELLER & LARSON, P.C.
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EXAMINER

LISTVOYB, GREGORY

ART UNIT	PAPER NUMBER
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1711

SHORTENED STATUTORY PERIOD OF RESPONSE	MAIL DATE	DELIVERY MODE
3 MONTHS	02/22/2007	PAPER

Please find below and/or attached an Office communication concerning this application or proceeding.

If NO period for reply is specified above, the maximum statutory period will apply and will expire 6 MONTHS from the mailing date of this communication.

Office Action Summary

Application No.

10/536,854

Applicant(s)

OH ET AL.

Examiner

Gregory Listvoyb

Art Unit

1711

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☐ Responsive to communication(s) filed on ____.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-10 is/are pending in the application.
- 4a) Of the above claim(s) ____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) ____ is/are allowed.
- 6) ☒ Claim(s) 1-10 is/are rejected.
- 7) ☐ Claim(s) ____ is/are objected to.
- 8) ☐ Claim(s) ____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on ____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
 - ☐ Certified copies of the priority documents have been received in Application No. ____.
 - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|--|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. ____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08)
Paper No(s)/Mail Date <u>7/5/2005</u> | 6) <input type="checkbox"/> Other: ____ |

DETAILED ACTION

Claim Rejections - 35 USC § 103

Claims 1-3 rejected under 35 U.S.C. 102/103 as being unpatentable over
Buchecker et al (WO 02/062873).

Regarding Claims 1-3 Buchecker discloses an aromatic photoactive side-chain diamine and polyamic acid and polyimide (Abstract, Example 1). In particular, the above compounds contain all structural elements, described in Claims 1 and 2, such as 3-substituted (with alkanes and long chain ethers, pages 5-13) aromatics, connected with ester linkages, phenyl rings (pages 6, 7).

Buchecker teaches structures comprising main diamine chain, which are analogous to ones in Claim 1 (page 37, line 20).

Regarding claim 3, Buchecker teaches aliphatic, alicyclic or aromatic dianhydride. (Page 30, line 10).

In examiner's position, Buchecker's diamine and polyimide are analogous to one in the Application. Therefore, MPEP 2144 is applicable in this case.

A *prima facie* case of obviousness may be made when chemical compounds have very close structural similarities and similar utilities. "An obviousness rejection

Art Unit: 1711

based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties." *In re Payne*, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). See *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963).

Claim Rejections - 35 USC § 103

Claim 1-10 rejected under 35 U.S.C. 102/103 as being unpatentable over Tanioka et al (US patent 6746730 and WO01/00732) herein Tanioka.

Tanioka teaches a varnish composition and liquid crystal display alignment comprising fully aromatic or alicyclic diamine and alicyclic or aromatic tetracarboxylic acid dianhydride (Abstract).

The diamine substitutes include 2 aromatic rings, connected with CONH or COO groups and aliphatic ether radical, attached to aryl ring (Column 7, line 55).

In examiner's position, Tanioka's diamine and polyimide are analogous to one in the Application. Therefore, MPEP 2144 is applicable in this case.

Art Unit: 1711

A *prima facie* case of obviousness may be made when chemical compounds have very close structural similarities and similar utilities. "An obviousness rejection based on similarity in chemical structure and function entails the motivation of one skilled in the art to make a claimed compound, in the expectation that compounds similar in structure will have similar properties." *In re Payne*, 606 F.2d 303, 313, 203 USPQ 245, 254 (CCPA 1979). See *In re Papesch*, 315 F.2d 381, 137 USPQ 43 (CCPA 1963).

In reference to Claims 4 and 5, Tanioka teaches the polyamic acid comprising dianhydride with aromatic and cycloaliphatic units (Column 25, line 25).

Regarding Claim 6, Tanioka teaches a polyamic acid with Molecular weight around 75000 (Table 1).

Regarding claim 7, a soluble polyimide prepared by wholly or partially imidizing the polyamic acid (column 26, line 30 and column 48, line 5).

Regarding claims 8-10, Tanioka teaches liquid crystal aligning film (Column 1, line 40) produced by dissolving the polyamic acid, prepared by copolymerization the diamine compound, alicyclic dianhydride (Column 26, line 10) and aromatic dianhydride (Column 25, line 25).

Double Patenting

Claim 1-10 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 2-10 of copending Application No. 11/221156. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications contain similar diamine structures.

In particular, Claim 2 of the Examined Application and Claim 2 of Application No. 11/221156 teach diamines with identical structures.

Claim 4 of the Examined Application and Claim 4 of Application No. 11/221156 disclose siloxane-containing diamines with identical structures.

Therefore, base diamine structure in the Application No. 11/221156 substantially overlaps the scope of the examined application.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Claim 1-10 provisionally rejected on the ground of nonstatutory obviousness-type double patenting as being unpatentable over claims 1-10 of copending. Although the conflicting claims are not identical, they are not patentably distinct from each other because both applications contain similar diamine structures.

In particular, Claim 1 of the Examined Application and Claim 4 of Application No. 11/559021 disclose the same diamine compounds.

This is a provisional obviousness-type double patenting rejection because the conflicting claims have not in fact been patented.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Gregory Listvoyb whose telephone number is (571) 272-6105. The examiner can normally be reached on 9am-6pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, James Seidleck can be reached on (571) 272-1078. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Art Unit: 1711

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

Gregory Listvoyb
Examiner
Art Unit 1711

Application/Control Number: 10/536,854
Art Unit: 1711

Page 8

A handwritten signature in black ink, appearing to read 'J. Seidleck', with a stylized, cursive script.

James J. Seidleck
Supervisory Patent Examiner
Technology Center 1700